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REMARKS

Claims 1-23 remain pending.

The amendments are not being made for the purpose of patentability since the examiner verbally withdrew his April 19, 2005 rejection of the claims in an April 26 telephone conversation with Applicants' attorney.

In the April 19, 2005 final office action, the examiner rejected all claims in view of various combinations of Sherman, Gruenwald, Suntola, Suzuki, Lei, and other art.

An example of Applicants' claimed technique of controlling gas flow conductance in a process chamber is shown in Fig. 15 (low conductance position) and Fig. 16 (high conductance position), where gas flows through the variable aperture of the lower gas path 24 as the shield 14 moves up or down. In Fig. 17, the shield 14 is down its maximum extent to also create a variable upper gas path 22. The variable apertures substantially circumscribe the periphery of the substrate. By the claimed "feature" substantially circumscribing the periphery of the substrate, a substantially uniform flow of gas is achieved.

Claim 1 recites:

I. A method comprising the acts of:

supplying an atomic layer deposition process gas to a process chamber, wherein a gas flow conductance is defined for gas exiting the chamber; and

varying a flux of the deposition process gas to a substrate in the process chamber by varying the gas flow conductance;

wherein varying the gas flow conductance comprises translating a feature substantially circumscribing a periphery of the substrate by moving the feature in a linear motion in a direction substantially perpendicular to a surface of the substrate to vary an aperture through which the gas exits the chamber.

In the April 26, 2005 telephone conversation with the examiner, the examiner indicated that he did not fully appreciate the "translating" limitation in the claim. On pages

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6-7 of the April 19, 2005 office action, the examiner indicated that Gruenwald's rotation of a perforated plate on the top of a chamber encompassed the claimed "translating." In the conversation with the examiner, Applicants' attorney pointed out that the claim term "translation" precludes rotation. Accordingly, the examiner verbally dropped the rejection of the claims over the cited art and requested that Applicants amend the claims to better define the variable aperture to one that moves in a linear direction substantially perpendicular to a surface of the substrate.

That amendment is made herein.

Accordingly, the Gruenwald system fails to teach or suggest translating a feature to vary an aperture for gas conductance, fails to teach or suggest moving a feature in a linear motion in a direction substantially perpendicular to a surface of the substrate to varying an aperture for gas conductance, and fails to teach or suggest any translatable feature that substantially circumscribes a periphery of the substrate.

The examiner relied on Lei for somehow suggesting to modify Gruenwald's valve to translate and substantially circumscribe a periphery of the substrate. However, Lei describes fixed openings for exhaust gasses (Figs. 8 and 9). Fig. 8 is a top down view of an opening 242 around the wafer 14. The opening 242 does not translate or change in any way so has absolutely nothing to do with varying the conductance of gas flow, which is the focus of Applicants' invention. As shown in Fig. 9, between the opening 242 and the wafer is a hollow channel 250 with vertical openings 248 to more uniformly withdraw the gasses. The openings 248 do not translate or change so have absolutely nothing to do with varying the conductance of gas flow.

So no cited prior art suggest a variable aperture that translates and substantially circumscribes a periphery of the substrate.

Independent Claims 19 and 20 are allowable for similar reasons since they both include the feature of translating a feature substantially circumscribing a periphery of the substrate for varying an aperture for gas conductance.


Accordingly, the Examiner has not met his burden of proof, and it is requested that the Examiner issue a Notice of Allowance for all Claims 1-23. If the Examiner's next

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action is other than the allowance of the claims, the Examiner is respectfully requested to call Applicant's attorney at (408) 382-0480 x202.

Certification of Facsimile Transmission

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

 5/24/05
Signature Date

Respectfully submitted,


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